REMARKS

Applicants have very carefully considered the Office Action and the Examiner's comments mailed January 13, 2004. As explained below, it is believed that the claims rejected in view of the cited prior art namely Kosich U.S. Patent 6,311,021 namely claims 10-19 and 62-67 and 91 are unlike the structure of Kosich and are allowable.

Kosich discloses an open loop charging circuit where strobe capacitor C9 is charged in response to setting of switch SW1 in combination with other components such as inductor L1, a portion of which is selected by switch SW1, and resistors such as R10, R11, R7, R36, R35 and R37. This open loop process and structure is described in Kosich, col. 5, lines 50 through col. 6, line 14. As made clear by Kosich, the output candela from the flash tube is selected by the setting of the switch SW1. In this regard, Kosich has stated:

> "Resistors R7, R36, R35 and R34 are sensing resistors with each correlating to one of the four candela settings 15, 30, 75 and 110 candela. In operation, if only sensing resistor R7 is coupled to the appropriate tap on the inductor L1 via switch SW1, then a 110 candela is selected, i.e., the least resistance with the highest energy. Conversely, if all of the sensing resistors R7, R36, R35 and R37 are coupled to the appropriate tap on the inductor L1 via switch SW1, then a 15 candela is selected, i.e., the highest resistance with the least energy. Thus, switch SW1 serves as a bridge between the appropriate resistor tap and the appropriate inductor tap. (col. 5, line 59 through col. 6, line 2).

As the above makes clear, the charging parameters of a capacitor C9 are established via manually settable switch SW1 and the other circuit elements such as inductor L1, and the noted resistors. Unlike the claimed structures, for example, claims 10-19, 62-67 and 91, the charging parameters of the circuit of Kosich are determined by the setting of switch SW1, inductor L1 and related resistors which are coupled to capacitor C9. There is no feedback in connection with these parameters to the control circuitry for purposes of adjusting the charging parameters relative to capacitor C9. Kosich teaches an open loop charging circuit unlike the pending claims.

The portion of the voltage of capacitor C9 that is fed back to the control circuit U1 in Kosich, is not to establish the specified candela, which is set in the open loop circuitry by the switch SW1. Rather, this feedback is used only to prevent overcharging of capacitor C9 in the event that the flashtube DS1 fails to ignite or flash when triggered. For example, in this regard, Kosich states:

"Overcharging of capacitor C9 is prevented by resistors R14 and R3 connected in series between the GND terminal and the positive electrode of the capacitor C9. The values of these resistors are chosen to feed a portion of the voltage across the capacitor C9 back to the microcontroller U1. By checking for a relatively high or low value after a trigger signal, the microcontroller U1 can determine if the flash tube DS1 fired. If the flash tube DS1 did not fire, the opto-oscillator circuit is shut down by way of opto-coupler U2 to prevent to overcharging of the capacitor C9." (col 6. lines 18-27)

The above quote from Kosich clearly directly contradicts the Examiner's statement on page 4, lines 6-8 of the Office Action to the effect that:

> "a portion of the voltage across C9 fed back to micro-controller U1) so as to produce the specified candela when the tube is energized."

Given the previous explanation, quoted above, from Kosich the purpose of the feedback voltage is not to adjust any of the parameters for charging the capacitor C9, but rather to act as an over voltage safety circuit when the tube DS1 has not fired. That teaching addresses a safety problem and does not address establishing the specified candela output in Kosich. The specified candela output in Kosich is set by SW1 in combination with the other components including inductor L1. This is quite different from the claimed structure.

For example, claim 10 which has been rejected in view of Kosich, requires:

> "wherein the control circuitry includes a capacitor voltage feedback circuit, and in response to a feedback signal therefrom, incrementally alters a capacitor charging parameter for a subsequent charging cycle so as to

produce the specified candela when the tube is energized." (pending claim 10)

As described above, the feedback structure of Kosich is for a different purpose and is quite unlike the claimed structure.

Similar comments apply to rejected claim 62. Pending claim 62 requires:

"wherein the control circuitry initiates each charging cycle by step-wise increasing a capacitor charging duty cycle parameter on a predetermined basis prior to altering that parameter in response to a feedback signal from the capacitor." (Pending claim 62)

The feedback structure and purpose of Kosich as described above is to prevent over voltage in view of a failure of the flash tube DS1 to fire when triggered. As described above, this is quite different and unlike the claimed structure. The various dependent claims add additional structure which in combination is not suggested, disclosed or made obvious by Kosich.

For all of the above reasons Kosich does not make obvious the pending claims 10-19, 62-67 and 91. The Examiner also objected to several of the claims pursuant to 35 U.S.C. §112, second paragraph, due to alleged indefinitenesses. In this regard, the Examiner stated on page 3 of the Office Action:

They render uncertainty to the invention whether 8-18 volts, 8-17 volts or 16-33 volts is required in the invention.

It is submitted that one of ordinary skill in the art would understand the meanings of the objected to claims, namely 68-70, 72-75, 84, 86-91 and that those claims are not indefinite. The claims are directed to those of skill in the art who are familiar with the specification and figures of the application or issued patent. The application and the figures disclose embodiments which can be coupled to various ranges of input voltages yet effect proper operation. For example, page 5 of the application, 5th and 6th full paragraphs thereof, state:

"The voltage on the lines P can vary, for example, between 8-40 volts DC. The principles of the present inention can be used with other ranges of input voltages and can be used with half wave or full wave rectified AC input voltages in a range of 10-33 volts RMS without departing from the spirit and scope of the present invention.

As discussed below, system 10 automatically adjusts to various input voltages. Thus, it can be powered without any changes off of 12 volts DC, 24 volts DC or 24 volts RMS rectified AC." (page 5, lines 15-22)

Further, page 12 of the specification, third full paragraph states:

As illustrated in Fig. 9, duty cycle, on-time, is automatically adjusted to track input voltages ranging, for example, from 8-33 volts DC or 8-33 volts RMS, full wave rectified AC. The control process substantially maintains light output and flash tube trigger voltage at preselected values even in the presence of such variations. (page 12, lines 11-14)

The Examiner is also directed to Fig. 9 in this regard. Thus, it is submitted that one of skill in the art would understand the meanings of each and every one of claims 68-70, 72-75, 84 and 86-91.

For all of the above reasons, the pending claims are allowable and allowance of the application is respectfully requested.

None of claims 1-9 and 20-61 have been addressed. Those claims have been withdrawn from consideration by the Examiner as a result of a previously filed response to a restriction requirement.

Respectfully submitted,

By _____
Paul M. Vargo, Reg. No. 29,116

WELSH & KATZ, LTD.
120 South Riverside Plaza - 22nd Floor
Chicago, Illinois 60606
312/655-1500